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EXAMINER

MILLS, DONALD L

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 01/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/722,525

Applicant(s)

FRAZER ET AL.

Examiner

Donald L Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 9, 11, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Andersson et al. (US 6,519,461 B1), hereinafter referred to as Andersson.

Regarding claim 1, Andersson discloses switching from a common channel to a dedicated channel based on common channel load, which comprises:

A plurality of dedicated channels, each dedicated channel having allocated to it a portion of the transmission capacity of said link to provide communication between said network node and one of said at least two subscriber stations (Referring to Figures 13 and 4, dedicated channels (DC1-DC3) **214-218**, allocated a portion of the transmission capacity for communication with mobile stations **30**. See column 10, lines 66-67.)

A shared channel having allocated to it a portion of the transmission capacity of said link and wherein said shared channel is operable to transmit frames of packets from said network node to said at least two subscriber stations (Referring to Figures 13 and 4, one or more common channels **212**, allocated a portion of the transmission capacity for communicating packets to mobile stations **30**. See column 10, lines 63-66,) *at least some such frames including*

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packets of data addressed to different ones of said at least two subscriber stations (Referring to Figures 13 and 4, the common channel delivers packets of information to a plurality of mobile users that share the common channel at the same time. See column 1, lines 56-58.)

Regarding claim 2, Andersson discloses *wherein said portion of the transmission capacity of said link allocated to said shared channel is fixed* (Referring to Figure 8, the common channel load, comprising a fixed maximum value which is supported by the link. See column 8, line 59.)

Regarding claim 3, Andersson discloses *wherein said structure includes a preselected minimum number of said dedicated channels and said portion of the transmission capacity of said link allocated to said shared channel comprises the balance of said transmission capacity which is not occupied by said preselected number of said dedicated channels* (Referring to Figure 13, three dedicated channels **214-218** and one common channel **212**, comprising the balance of the transmission capacity.)

Regarding claim 4, Andersson discloses *including at least two shared channels, each shared channel being operable to transmit frames of packets from said network node to said at least two subscriber stations* (Referring to Figures 12 and 4, channel switching can occur between two different common channels and common channel **320** transmits packets to and from mobile stations **30**. See column 5, lines 43-45 and column 10, lines 52-59.)

Regarding claim 5, Andersson discloses *wherein each of said at least two shared channels is operable to transmit said frames of packets to different ones of said at least two subscriber stations* (Referring to Figures 12 and 4, channel switching can occur between two

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different common channels and common channel **320** transmits packets to and from mobile stations **30**. See column 5, lines 43-45 and column 10, lines 52-59.)

Regarding claim 9, Andersson discloses *wherein data for a subscriber station is transmitted from said network node via a combination of a dedicated channel and said shared channel, said dedicated channel providing a first data transmission rate and said shared channel providing an additional transmission rate, as needed, to accommodate transmission bursts in excess of said first data transmission rate* (Referring to Figures 12 and 4, packets are transmitted between mobile stations **30** and RNS **25** via common channel **320** and dedicated channels **322-326**; both common channel **320** and dedicated channels **322-326** comprising data transmission rates capable of supporting increasing/decreasing data rates. See column 10, lines 52-59.)

Regarding claim 11, Andersson discloses *wherein said link is a radio link* (Referring to Figure 4, mobile telecommunications system with radio interface. See column 6, line 19.)

Regarding claim 12, Andersson discloses *wherein said radio link employs CDMA as a multiplexing technique* (Referring to Figure 4, radio access based upon CDMA. See column 6, lines 50-52.)

3. Claim 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Soininen et al. (US 6,434,130 B1), hereinafter referred to as Soininen.

Regarding claim 13, Soininen discloses a switching control method, which comprises:

Determining the requirements for a first data transmission intended for a subscriber station (Referring to Figures 2a and 2b, if it is determined whether the data is to be transmitted, destined for a user. See column 5, lines 54-55.)

Selecting the use of a dedicated channel or a shared channel to effect said first data transmission in accordance with said determined requirements (Referring to Figures 2a and 2b, determine whether the data is to be transmitted on a dedicated channel or a common channel. See column 5, lines 55-56.)

If a dedicated channel is selected, obtaining a dedicated channel when available and transmitting said first data transmission thereon and if a shared channel is selected, transmitting said first data transmission on said shared channel in the form of data packets addressed to said subscriber station (Referring to Figures 2a and 2b, based upon selecting a dedicated or common channel, the output provided by packet data block 14 will include the received data as well as control information as to the channel to be used to transmit the packet data. See column 5, lines 57-59,) said data packets assembled into frames, at least some such frames including packets of data addressed to different ones of said subscriber stations (Referring to Figures 2a and 2b, by definition a common channel delivers packets of information to a plurality of mobile users that share the common channel at the same time. See column 5, lines 53-56.)

Regarding claim 14, Soininen discloses wherein the determination in step (i) is made in consideration of the QoS requirements of said first data transmission (Referring to Figures 2a and 2b, the packet data blocks 14 and 114 determine that the packets are short and transmitted infrequently. See column 8, lines 41-44.)

Regarding claim 15, Soininen discloses wherein the determination in step (i) is made in consideration of the type of data to be transmitted (Referring to Figures 2a and 2b, the packet data blocks 14 and 114 determine that the packets are short and transmitted infrequently. See column 8, lines 41-44.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson et al. (US 6,519,461 B1), hereinafter referred to as Andersson.

Regarding claim 6 as explained above in the rejection statement of claim 1, Andersson discloses all of the claim limitations of claim 1 (parent claim).

Andersson does not disclose *wherein said balance of said transmission capacity is allocated unequally to each of said at least two shared channels.*

Andersson teaches switching from a common channel to a dedicated channel comprising two different common channels (See column 5, lines 43-45.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the balance of transmission capacity unequally between the common channels of Andersson. One of ordinary skill in the art would have been motivated to do so in order to provide low data transmission on another common channel when the current load is exceeded as taught by Andersson (See column 5, lines 50-56.)

Regarding claim 10 as explained above in the rejection statement of claim 1, Andersson discloses all of the claim limitations of claim 1 (parent claim).

Andersson does not disclose *wherein at least one of said plurality of dedicated channels has a different amount of said transmission capacity allocated to it than does another of said plurality of dedicated channels.*

Andersson teaches switching a user connection from one kind of channel to a different type of channel, comprising switching from a shared channel to a dedicated channel (See column 5, lines 37-43.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement dedicated channels of unequal bandwidth in the system of Andersson. One of ordinary skill in the art would have been motivated to do so in order to support packet connections with higher or lower required data rates.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson et al. (US 6,519,461 B1), hereinafter referred to as Andersson, in view of Wallentin et al. (US 6,347,091 B1), hereinafter referred to as Wallentin.

Regarding claim 7 as explained above in the rejection statement of claim 1, Andersson discloses all of the claim limitations of claim 1 (parent claim).

Andersson does not disclose *wherein additional dedicated channels are created, as needed, by reallocating necessary transmission capacity of said link from at least one shared channels to such additional dedicated channels.*

Wallentin teaches a method for dynamically adapting a connection state in a mobile communications systems comprising dynamically/adaptively determining and allocating a dedicated channel when switching to a dedicated channel from a common channel, reallocating

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bandwidth of the link from the common channel to the dedicated channel in order to preserve the bandwidth committed to the dedicated channels (See column 6, lines 46-47.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dynamical channel adapting method of Wallentin in the system of Andersson. One of ordinary skill in the art would have been motivated to do so in order to provide an optimal state for the connection as taught by Wallentin (See column 2, lines 48-53.)

Regarding claim 8 as explained above in the rejection statement of claim 1, Andersson discloses all of the claim limitations of claim 1 (parent claim).

Andersson does not disclose *wherein said at least one shared channel has preselected minimum transmission capacity and reallocation of transmission capacity from said at least one shared channel to said additional dedicated channels ceases before said transmission capacity allocated to said shared channels falls below said minimum transmission capacity.*

Wallentin teaches a method for dynamically adapting a connection state in a mobile communications systems comprising dynamically/adaptively determining and allocating a dedicated channel when switching to a dedicated channel from a common channel; reallocating bandwidth of the link from the common channel, without terminating the common channel, to the dedicated channel in order to preserve the bandwidth committed to the dedicated channels (See column 6, lines 46-47.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dynamical channel adapting method of Wallentin in the system of Andersson. One of ordinary skill in the art would have been motivated to do so in order to provide an optimal state for the connection as taught by Wallentin (See column 2, lines 48-53.)

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen et al. (US 6,434,130 B1), hereinafter referred to as Soininen, in view of Andersson et al. (US 6,519,461 B1), hereinafter referred to as Andersson.

Regarding claim 16 as explained above in the rejection statement of claim 13, Soininen discloses all of the claim limitations of claim 13 (parent claim).

Soininen does not disclose *if a dedicated channel is selected and no such dedicated channel is available, said first data transmission is transmitted on said shared channel.*

Andersson teaches the following approach that can be used to switch from a dedicated type to a common type channel, comprising measuring the current channel load or throughput (block 158); that amount of data in the transmit buffer associated with the user connection is determined (block 160); the current amount of data in the transmit buffer is compared to a buffer threshold corresponding to one or more quality of service parameters associated with the user connection and a currently detected control channel load (block 162); the user connection is switched to a channel if the current buffer amount is greater than the buffer threshold (block 164) (See column 9, lines 38-49.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the channel switching method of Andersson in the system of Soininen. One of ordinary skill in the art would have been motivated to do so in order to provide better channel-type switching decisions based upon the current capability of the system as taught by Soininen (See column 4, lines 18-20.)

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8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen et al. (US 6,434,130 B1), hereinafter referred to as Soininen, in view Ohta (US 5,878,277).

Regarding claim 17 as explained above in the rejection statement of claim 13, Soininen discloses all of the claim limitations of claim 13 (parent claim).

Soininen does not disclose *wherein step (ii), both a dedicated channel and a shared channel are selected, an amount of said first data transmission corresponding to the transmission capacity of said dedicated channel being sent thereon and the balance of said first data transmission being sent on said shared channel.*

Ohta teaches a communications system simultaneously utilizing both dedicated and common communication channels wherein the dedicated communication channels are assigned for transmission of audio signals and the common communication channels are assigned for transmission of data signals, comprising the total aggregate signal bandwidth between the two channels (See column 18, lines 5-12.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Ohta in the system of Soininen. One of ordinary skill in the art would have been motivated to do so in order to provide efficient multimedia communication in a bi-directional communications network as taught by Ohta (See column 7, lines 9-15.)

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kokko et al. (US 5,790,534), hereinafter referred to as Kokko, in view of Wallentin et al. (US 6,347,091 B1), hereinafter referred to as Wallentin.

Regarding claim 18, Kokko discloses *allocating a portion of the bandwidth of said multiplexed link to create a number of dedicated channels, each of which can be assigned to a different one of said subscriber stations* (Referring to Figure 1, there are N sets of forward and reverse control channels CCH-f and CCH-b for N packet terminals or MSs 12. See column 3, lines 7-9.)

Kokko does not disclose *allocating a portion of the remaining bandwidth of said multiplexed link to a shared channel which can communicate with a plurality of said subscriber stations, data transmission on said shared channel in the form of data packets assembled into frames, at least some such frames including packets of data addressed to different ones of said subscriber stations and monitoring the requirements for dedicated channels in said structure and reallocating bandwidth of said multiplexed link between said shared channel and said dedicated channels to create or remove dedicated channels as required.*

Wallentin teaches a method for dynamically adapting a connection state in a mobile communications systems comprising dynamically/adaptively determining and allocating a dedicated channel when switching to a dedicated channel from a common channel, which by definition delivers packets of information to a plurality of mobile users that share the common channel at the same time, (comprising bandwidth which is not committed to the dedicated channel, for servicing multiple mobile stations); reallocating bandwidth of the link from the common channel to the dedicated channel in order to preserve the bandwidth committed to the dedicated channels (See column 6, lines 46-47.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dynamical channel adapting method of Wallentin in the system of

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Kokko. One of ordinary skill in the art would have been motivated to do so in order to provide an optimal state for the connection as taught by Wallentin (See column 2, lines 48-53.)

Regarding claim 19, the primary reference teaches *wherein said structure includes a preselected minimum number of dedicated channels and, in step (iii), no dedicated channels are removed when said number of dedicated channels is equal to said preselected minimum number* (Referring to Figure 1, there are N sets of forward and reverse control channels CCH-f and CCH-b for N packet terminals or MSs 12; if there are more request than the BS 14 is able to grant, those MSs whose reservations requests arrived earliest receive permission to transmit in the next frame. See column 3, lines 7-9 and column 7, lines 45-48.)

Regarding claim 20 as explained above in the rejection statement of claim 18, Kokko and Wallentin disclose all of the claim limitations of claim 18 (parent claim).

Kokko does not disclose *wherein said structure includes a preselected minimum portion of bandwidth allocated to said shared channel and, in step (iii), no dedicated channels are created which would otherwise reduce the bandwidth allocated to said shared channel below said minimum portion of bandwidth.*

Wallentin teaches a method for dynamically adapting a connection state in a mobile communications systems comprising dynamically/adaptively determining and allocating a dedicated channel when switching to a dedicated channel from a common channel (comprising bandwidth which is committed to the common channel, for servicing multiple mobile stations, while not compromising the integrity of the common channel by the allocation of dedicated channels) (See column 6, lines 46-47.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dynamical channel adapting method of Wallentin in the system of Kokko. One of ordinary skill in the art would have been motivated to do so in order to provide an optimal state for the connection as taught by Wallentin (See column 2, lines 48-53.)

Regarding claim 21 as explained above in the rejection statement of claim 18, Kokko and Wallentin disclose of the claim limitations of claim 18 (parent claim).

Kokko does not disclose *wherein said structure includes a preselected minimum number of dedicated channels and a preselected minimum portion of bandwidth allocated to said shared channel and, in step (iii), no dedicated channels are created which would otherwise reduce the bandwidth allocated to said shared channel below said minimum portion of bandwidth and no dedicated channels are removed when said number of dedicated channels is equal to said preselected minimum number.*

Wallentin teaches a method for dynamically adapting a connection state in a mobile communications systems comprising dynamically/adaptively determining and allocating a dedicated channel when switching to a dedicated channel from a common channel (comprising bandwidth which is committed to the dedicated and common channels, for servicing multiple mobile stations, while not compromising the integrity of the common or dedicated channels by the allocation of dedicated channels) (See column 6, lines 46-47.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dynamical channel adapting method of Wallentin in the system of Kokko. One of ordinary skill in the art would have been motivated to do so in order to provide an optimal state for the connection as taught by Wallentin (See column 2, lines 48-53.)

Response to Arguments

10. Applicant's arguments filed August 17, 2004 have been fully considered but they are not persuasive.

Rejection Under 35 USC § 102

On page 12 of the remarks, regarding claims 1 and 13, the Applicant argues neither Andersson, Soininen, or Wallentin disclose, teach, or otherwise make obvious *at least some such frames including packets of data addressed to different ones of said at least two subscriber stations*. The Examiner respectfully disagrees. The Examiner notes the Applicant's definition of a *shared channel* as a multiplexed channel in which several, or all, subscriber stations receive transmitted data from a base station (See page 7, lines 13-14.) By definition, the common channel delivers packets of information to a plurality of mobile users that share the common channel at the same time. The Applicant further states that the claims of the subject application are limited to a downlink channel, in which there is no competition; however, this limitation is not recited in the claim. Therefore, Andersson, Soininen, and Wallentin disclose *at least some such frames including packets of data addressed to different ones of said at least two subscriber stations*. The Examiner notes that further clarification that distinguishes the Applicant's *shared channel* from a "common channel" may result in overcoming the prior art.

Rejection Under 35 USC § 103

On page 12 of the remarks, regarding claim 18, the Applicant argues neither Andersson, Soininen, or Wallentin disclose, teach, or otherwise make obvious *at least some such frames*

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including packets of data addressed to different ones of said at least two subscriber stations.

The Examiner respectfully disagrees for the same reasons stated above.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

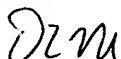
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

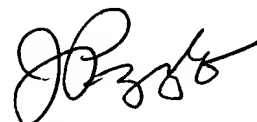
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills



December 29, 2004



JOHN PEZZLO
PRIMARY EXAMINER